UCSC 100 Gbps Science DMZ

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Diagram showing network connections and bandwidths for CENIC DC and Global Internet, CENIC HPR and Global Research Networks, Border, Core, 10 Gbps Campus Distribution Core, Science DMZ Router, L2, Science DMZ, and perfSONAR.
Research Support

• Center for Biomolecular Science & Engineering (CBSE)
  – genomics.ucsc.edu
  – cghub.ucsc.edu – currently 81K files total @ 2PB, downloads 1PB/mo
  – Big Data in Translational Genomics NIH project (BD2K)

• Santa Cruz Institute for Particle Physics (SCIPP)
  – ATLAS/LHC
  – 10-20TB per year

• Astrophysics
  – Hyades cluster – 270TB Linux filesystem, 1PB S3
  – 100PB+ simulation data at national labs

• Campus services
  – DTN
  – L2
High-bandwidth Protocol Testbed

- Dummynet lets us specify path characteristics
  - b/w limits, loss rates, etc.
  - http://info.iinet.unipi.it/~luigi/dummynet/
- Understand impact of configuration parameters on performance
- Determine optimal configurations
- Compare performance